

Introduction to immunology

Introduction

- Immunology is the study of the immune system or immunity, a range of defenses developed by humans, for example, to protect against infection by surrounding microorganisms (viruses, bacteria, fungi, and other parasites) and related dangerous pathologies.
- It is a branch of biology involved with the study of the immune system, components of the immune system, its biological processes, the physiological functioning of the immune system, types, its disorders

History of immunology

- 1796 – First demonstration of [smallpox vaccination](#) ([Edward Jenner](#))
- 1808 – 1813 - First experimental demonstration of the [germ theory of disease](#) by [Agostino Bassi](#) though he does not formally propose the theory until 1844
- 1850 – Demonstration of the contagious nature of puerperal fever (childbed fever) ([Ignaz Semmelweis](#))
- 1857–1870 – Confirmation of the role of microbes in fermentation ([Louis Pasteur](#))
- 1862 – [Phagocytosis](#) ([Ernst Haeckel](#))

contd

- 1876 – Demonstration that microbes can cause disease-anthrax ([Robert Koch](#))
- 1877 – [Mast cells](#) ([Paul Ehrlich](#))
- 1878 – Confirmation and popularization of the germ theory of disease ([Louis Pasteur](#))
- 1883 – 1905 – Cellular theory of immunity via phagocytosis by macrophages and microphages (polymorhonuclear leukocytes) ([Elie Metchnikoff](#))
- 1891 – Demonstration of cutaneous (delayed type) hypersensitivity ([Robert Koch](#))

contd

- 1900 – [Antibody](#) formation theory ([Paul Ehrlich](#))
- 1901 – [Blood groups](#) ([Karl Landsteiner](#))
- 1972 – Structure of the antibody molecule
- 1973 – [Dendritic Cells](#) first described by [Ralph M. Steinman](#)
- 1974 – Immune Network Hypothesis ([Niels Jerne](#))

Branches of immunology

- Classical immunology.
- Clinical immunology
- Immunopathology
- Computational immunology.
- Diagnostic immunology.
- Evolutionary immunology
- Nutritional immunology
- Reproductive immunology

contd

- Systems immunology
- Immunomics
- Immunoproteomics
- Immunochemistry
- Immunophysics